



Connecting the Switch to the Network

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Connecting to the Network

You need to connect the following ports when connecting the switch to the network:

- Console port—A direct local management connection used to initially configure the switch
- Management ports—An online management connection
- Uplink and downlink ports—Connections to hosts and servers



Caution

When running power and data cables in overhead or subfloor cable trays, we strongly recommend that you locate power cables and other potential noise sources as far away as practical from network cabling that terminates on Cisco equipment. In situations where long parallel cable runs cannot be separated by at least 3.3 feet (1 meter), we recommend that you shield any potential noise sources by housing them in a grounded metallic conduit.

Preparing for Network Connections

When preparing your site for network connections to your switch, consider the following for each type of interface and gather all the required equipment before connecting the ports:

- Cabling required for each interface type
- Distance limitations for each signal type
- Additional interface equipment required

Connecting to a Console

You can connect the switch to a console to perform the following functions:

- Configuring the switch using the CLI
- Monitoring network statistics and errors
- Configuring SNMP agent parameters
- Downloading software updates



Note We recommend that you use this port to create a local management connection to set the IP address and other initial configuration settings before connecting the switch to the network for the first time.

The console port on the switch is an RS-232 port with an RJ-45 interface. This is an asynchronous (async) serial port; any device connected to this port must be capable of asynchronous transmission.



Caution The console port can be used to connect to a modem. If you do not connect it to a modem, connect it either before powering the switch on or after the switch has completed the boot process.

Before you begin

Before you connect the switch to a console, ensure that you have the following:

- Computer terminal that supports VT100 terminal emulation. The terminal emulation software (such as HyperTerminal or Procomm Plus) makes communication between the switch and a computer possible during setup and configuration.

Step 1 Configure the terminal emulator program to match each of the following default port characteristics:

- 9600 baud
- 8 data bits
- 1 stop bit
- No parity

Step 2 Connect the DB-9 connector on the other end of the cable to the computer serial port.

What to do next

You are ready to configure the switch.

Connecting the Management Interface

To create a management connection to the switch, you must connect one of the two management ports on the switch to an external hub, switch, or router.

Before you begin

To prevent an IP address conflict, you must complete the initial configuration and establish an IP address for the switch.

Step 1 Connect the appropriate modular cable to one of the two management ports on the switch.

Note Connect to only one management port. The switch does not support your use of two management ports.

- To connect one of the two management ports to an Ethernet switch port or hub, insert the RJ-45 connector (used for shorter connections) or SFP transceiver (used for longer connections) for a modular, straight-through UTP cable into the appropriate management port.
- To connect to a router, insert the RJ-45 connector or SFP transceiver on a crossover cable into the appropriate management port.

Step 2 Connect the other end of the cable to the switch, hub, or router.

Connecting Interface Ports to Other Devices

After you perform the initial configuration for the switch and create a management connection, you are ready to connect the interface ports on the switch to other devices. Depending on the types of interface ports on the switch, you will need to use interface cables with QSFP28, QSFP+, SFP+, or SFP transceivers or RJ-45 connectors to connect the switch to other devices.



Note If you need to use SFP+ or SFP transceivers in a QSFP28 uplink port, install a QSFP-to-SFP adapter, such as the CVR-QSFP-SFP10G adapter, in the QSFP28 port and then install the SFP+ or SFP transceiver. The switch automatically sets the port speed for the SFP+ or SFP transceiver.



Note One of the three rows of downlink ports is upside down to optimize connections. When removing a transceiver from the upside-down row, without a pull-tab, you need to insert a standard (flat) screwdriver to press the release tab to free it from the port.

The transceivers used with many fiber-optic cables come separated from their cables. To prevent damage to the fiber-optic cables and their transceivers, we recommend that you keep these transceivers disconnected from their fiber-optic cables when installing the transceiver in the interface port. Before removing a transceiver for a fiber-optic cable, you must remove the cable from the transceiver.

To maximize the effectiveness and life of your transceivers and optical cables, do the following:

- Wear an ESD-preventative wrist strap that is connected to an earth ground whenever handling transceivers. The switch is typically grounded during installation and provides an ESD port to which you can connect your wrist strap.
- Do not remove and insert a transceiver more often than is necessary. Repeated removals and insertions can shorten its useful life.
- Keep the transceivers and fiber-optic cables clean and dust free to maintain high signal accuracy and to prevent damage to the connectors. Attenuation (loss of light) is increased by contamination and should be kept below 0.35 dB.
- Clean these parts before installation to prevent dust from scratching the fiber-optic cable ends.
- Clean the connectors regularly; the required frequency of cleaning depends upon the environment. In addition, clean connectors if they are exposed to dust or accidentally touched. Both wet and dry cleaning techniques can be effective; refer to your site's fiber-optic connection cleaning procedures.
- Do not touch the ends of connectors. Touching the ends can leave fingerprints and cause other contamination.
- Inspect routinely for dust and damage. If you suspect damage, clean and then inspect fiber ends under a microscope to determine if damage has occurred.



Warning **Statement 1051**—Laser Radiation

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

Installing QSFP+ Transceivers

The QSFP+ transceiver module can have either a bail-clasp latch or a pull-tab latch.



Caution The QSFP+ transceiver module is a static-sensitive device. Always use an ESD wrist strap or similar individual grounding device when handling QSFP+ transceiver modules or coming into contact with system modules.

- Step 1** Attach an ESD wrist strap to yourself and a properly grounded point on the chassis or the rack. Follow its instructions for use.
- Step 2** Remove the QSFP+ transceiver module from its protective packaging.
- Step 3** Remove the dust cover from the port end of the transceiver.
- Step 4** Check the label on the QSFP+ transceiver module body to verify that you have the correct model for your network.
- Step 5** For optical QSFP+ transceivers, remove the optical bore dust plug and set it aside.
- Step 6** For transceivers equipped with a bail-clasp latch, do the following:
- a) Keep the bail-clasp aligned in a vertical position.
 - b) Align the QSFP+ transceiver in front of the module's transceiver socket opening and carefully slide the QSFP+ transceiver into the socket until the transceiver makes contact with the socket electrical connector.

Step 7

For QSFP+ transceivers equipped with a pull-tab, do the following:

- a) Hold the transceiver so that the identifier label is on the top.
 - b) Align the QSFP+ transceiver in front of the module's transceiver socket opening and carefully slide the QSFP+ transceiver into the socket until the transceiver makes contact with the socket electrical connector.
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